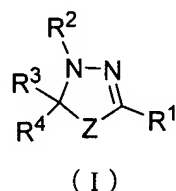


## **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

## **Listing of Claims:**

1. (Original) An antitumor agent comprising a thiadiazoline derivative represented by the general formula (I), or a pharmacologically acceptable salt thereof as an active ingredient:



<wherein Z represents a sulfur atom or -S(=O)-, R<sup>1</sup> represents substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkynyl, substituted or unsubstituted aryl, a substituted or unsubstituted aromatic heterocyclic group, or -C(=W)R<sup>5</sup> {wherein W represents an oxygen atom or a sulfur atom, and R<sup>5</sup> represents a hydrogen atom, substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, -YR<sup>6</sup> (wherein Y represents an oxygen atom or a sulfur atom, and R<sup>6</sup> represents a hydrogen atom, substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted

lower alkynyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, or a substituted or unsubstituted heterocyclic group), or  $-NR^7R^8$  [wherein  $R^7$  and  $R^8$  are the same or different, and represent a hydrogen atom, substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkynyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, a substituted or unsubstituted heterocyclic group,  $-OR^9$  (wherein  $R^9$  has the same meaning as that of the aforementioned  $R^6$ ), or  $-NR^{10}R^{11}$  (wherein  $R^{10}$  and  $R^{11}$  are the same or different, and represent a hydrogen atom, substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkynyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, or a substituted or unsubstituted heterocyclic group, or  $R^{10}$  and  $R^{11}$  are combined together with the adjacent nitrogen atom to form a substituted or unsubstituted heterocyclic group), or  $R^7$  and  $R^8$  are combined together with the adjacent nitrogen atom to form a substituted or unsubstituted heterocyclic group]],  $R^2$  represents a hydrogen atom, substituted or unsubstituted lower alkyl, or  $-C(=W^1)R^{12}$  [wherein  $W^1$  represents an oxygen atom or a sulfur atom,  $R^{12}$  represents a hydrogen atom, substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkynyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, a substituted or unsubstituted heterocyclic group,  $-Y^1R^{13}$

(wherein  $Y^1$  represents an oxygen atom or a sulfur atom, and  $R^{13}$  represents substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkynyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, or a substituted or unsubstituted heterocyclic group), or  $-NR^{14}R^{15}$  (wherein  $R^{14}$  and  $R^{15}$  are the same or different, and represent a hydrogen atom, substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkynyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, or a substituted or unsubstituted heterocyclic group, or  $R^{14}$  and  $R^{15}$  are combined together with the adjacent nitrogen atom to form a substituted or unsubstituted heterocyclic group)],

$R^3$  represents a hydrogen atom, substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkynyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, or a substituted or unsubstituted heterocyclic group, and  $R^4$  represents substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkynyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, or a substituted or unsubstituted heterocyclic group, or  $R^3$  and  $R^4$  are combined together to represent

$-(CR^{16A}R^{16B})_{m1}-Q-(CR^{16C}R^{16D})_{m2}-$  {wherein Q represents a single bond,

substituted or unsubstituted phenylene, or cycloalkylene,  $m_1$  and  $m_2$  are the same or different, and each represents an integer of 0 to 4, with the proviso that  $m_1$  and  $m_2$  are not 0 at the same time,

$R^{16A}$ ,  $R^{16B}$ ,  $R^{16C}$  and  $R^{16D}$  are the same or different, and represent a hydrogen atom, halogen, substituted or unsubstituted lower alkyl,  $-OR^{17}$  [wherein  $R^{17}$  represents a hydrogen atom, substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkynyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, a substituted or unsubstituted heterocyclic group,  $-CONR^{18}R^{19}$  (wherein  $R^{18}$  and  $R^{19}$  are the same or different, and represent a hydrogen atom, substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkynyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, or a substituted or unsubstituted heterocyclic group, or  $R^{18}$  and  $R^{19}$  are combined together with the adjacent nitrogen atom to form a substituted or unsubstituted heterocyclic group),  $-SO_2NR^{20}R^{21}$  (wherein  $R^{20}$  and  $R^{21}$  have the same meanings as those of the aforementioned  $R^{18}$  and  $R^{19}$ , respectively), or  $-COR^{22}$  (wherein  $R^{22}$  represents a hydrogen atom, substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkynyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, or a substituted or unsubstituted heterocyclic group)], -

$\text{NR}^{23}\text{R}^{24}$  [wherein  $\text{R}^{23}$  and  $\text{R}^{24}$  are the same or different, and represent a hydrogen atom, substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkynyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, a substituted or unsubstituted heterocyclic group,  $-\text{COR}^{25}$  (wherein  $\text{R}^{25}$  represents a hydrogen atom, substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkynyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, a substituted or unsubstituted heterocyclic group, substituted or unsubstituted lower alkoxy, substituted or unsubstituted aryloxy, amino, substituted or unsubstituted lower alkylamino, di-(substituted or unsubstituted lower alkyl)amino, or substituted or unsubstituted arylamino), or  $-\text{SO}_2\text{R}^{26}$  (wherein  $\text{R}^{26}$  represents substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkynyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, or a substituted or unsubstituted heterocyclic group), or  $\text{R}^{23}$  and  $\text{R}^{24}$  are combined together with the adjacent nitrogen atom to form a substituted or unsubstituted heterocyclic group], or  $-\text{CO}_2\text{R}^{27}$  (wherein  $\text{R}^{27}$  represents a hydrogen atom, substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkynyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, or a substituted

or unsubstituted heterocyclic group), or  $R^{16A}$  and  $R^{16B}$ , or  $R^{16C}$  and  $R^{16D}$  are combined together to represent an oxygen atom, and when  $m_1$  or  $m_2$  is an integer of 2 or more, any of  $R^{16A}$ ,  $R^{16B}$ ,  $R^{16C}$  and  $R^{16D}$  may be the same or different, and any two of  $R^{16A}$ ,  $R^{16B}$ ,  $R^{16C}$  and  $R^{16D}$  which are bound to the adjacent two carbon atoms may combine together to form a bond}>.

2. (Original) The antitumor agent according to claim 1, wherein  $R^1$  is substituted or unsubstituted lower alkynyl, substituted or unsubstituted aryl, or a substituted or unsubstituted aromatic heterocyclic group.

3. (Original) The antitumor agent according to claim 1, wherein  $R^1$  is substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, or  $-C(=W)R^5$  (wherein  $W$  and  $R^5$  have the same meanings as those mentioned above).

4. (Original) The antitumor agent according to claim 1, wherein  $R^1$  is substituted or unsubstituted aryl, or a substituted or unsubstituted aromatic heterocyclic group.

5. (Original) The antitumor agent according to claim 1, wherein  $R^1$  is substituted or unsubstituted aryl.

6. (Original) The antitumor agent according to claim 1, wherein R<sup>1</sup> is substituted or unsubstituted lower alkynyl.

7. (Original) The antitumor agent according to claim 1, wherein R<sup>1</sup> is substituted or unsubstituted lower alkyl, or substituted or unsubstituted lower alkenyl.

8. (Currently Amended) The antitumor agent according to claim 1 ~~any one of claims 1 to 7~~, wherein R<sup>2</sup> is a hydrogen atom, substituted or unsubstituted lower alkyl, or -C(=W<sup>1</sup>)R<sup>12</sup> (wherein W<sup>1</sup> and R<sup>12</sup> have the same meanings as those mentioned above, respectively).

9. (Currently Amended) The antitumor agent according to claim 1 ~~any one of claims 1 to 7~~, wherein R<sup>2</sup> is -C(=W<sup>1</sup>)R<sup>12</sup> (wherein W<sup>1</sup> and R<sup>12</sup> have the same meanings as those mentioned above, respectively).

10. (Currently Amended) The antitumor agent according to claim 8 ~~or 9~~, wherein R<sup>12</sup> is substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkynyl, or substituted or unsubstituted cycloalkyl.

11. (Currently Amended) The antitumor agent according to claim 8 ~~or 9~~, wherein R<sup>12</sup> is substituted or unsubstituted lower alkyl.

12. (Currently Amended) The antitumor agent according to claim 8 ~~or 9~~, wherein R<sup>12</sup> is lower alkyl.

13. (Currently Amended) The antitumor agent according to claim 8 ~~any one of claims 8 to 12~~, wherein W<sup>1</sup> is an oxygen atom.

14. (Currently Amended) The antitumor agent according to claim 1 ~~any one of claims 1 to 13~~, wherein R<sup>3</sup> is substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkynyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, or a substituted or unsubstituted heterocyclic group.

15. (Currently Amended) The antitumor agent according to claim 1 ~~any one of claims 1 to 13~~, wherein R<sup>3</sup> is substituted or unsubstituted lower alkyl.

16. (Currently Amended) The antitumor agent according to claim 1 ~~any one of claims 1 to 13~~, wherein R<sup>3</sup> is substituted lower alkyl.



17. (Currently Amended) The antitumor agent according to claim 1 ~~any one of claims 1 to 16~~, wherein R<sup>4</sup> is substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, or a substituted or unsubstituted heterocyclic group.

18. (Currently Amended) The antitumor agent according to claim 1 ~~any one of claims 1 to 16~~, wherein R<sup>4</sup> is substituted or unsubstituted aryl, or a substituted or unsubstituted heterocyclic group.

19. (Currently Amended) The antitumor agent according to claim 1 ~~any one of claims 1 to 16~~, wherein R<sup>4</sup> is substituted or unsubstituted phenyl, or substituted or unsubstituted thienyl.

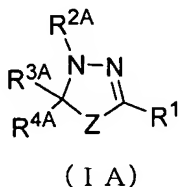
20. (Currently Amended) The antitumor agent according to claim 1 ~~any one of claims 1 to 13~~, wherein R<sup>3</sup> and R<sup>4</sup> are combined together to represent  $-(\text{CR}^{16\text{A}}\text{R}^{16\text{B}})_{m1}-\text{Q}-(\text{CR}^{16\text{C}}\text{R}^{16\text{D}})_{m2}-$  (wherein Q, R<sup>16A</sup>, R<sup>16B</sup>, R<sup>16C</sup>, R<sup>16D</sup>, m1 and m2 have the same meanings as those mentioned above, respectively).

21. (Currently Amended) The antitumor agent according to claim 1 ~~any one of claims 1 to 13~~, wherein R<sup>3</sup> and R<sup>4</sup> are combined together to represent  $-(\text{CH}_2)_{m1}-\text{Q}-(\text{CH}_2)_{m2}-$  (wherein Q, m1 and m2 have the same meanings as those mentioned above, respectively).

22. (Currently Amended) The antitumor agent according to claim 20 or 21, wherein Q is substituted or unsubstituted phenylene.

23. (Currently Amended) A mitotic kinesin Eg5 inhibitor comprising the thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 1 ~~any one of claims 1 to 22~~ as an active ingredient.

24. (Original) A thiadiazoline derivative represented by the formula (IA) or a pharmacologically acceptable salt thereof:



{wherein Z has the same meaning as that mentioned above,

R<sup>1</sup> has the same meaning as that mentioned above,

(A) when R<sup>1</sup> is substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, or -C(=W)R<sup>5</sup> (wherein W and R<sup>5</sup> have the same meanings as those mentioned above, respectively), R<sup>2A</sup>, R<sup>3A</sup> and R<sup>4A</sup> have the same meanings as those of the aforementioned R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup> (with proviso that Z<sup>A</sup> is a sulfur atom, R<sup>1</sup> is benzyl, R<sup>2A</sup> is acetyl, one of R<sup>3</sup> and R<sup>4A</sup> is methyl, and the other of R<sup>3</sup> and R<sup>4A</sup> is not 2-oxopropyl), respectively

(B) when R<sup>1</sup> is substituted or unsubstituted lower alkynyl, or a substituted or unsubstituted aromatic heterocyclic group, R<sup>2A</sup> and R<sup>3A</sup> have

the same meanings as those of the aforementioned  $R^2$  and  $R^3$ , respectively, and  $R^{4A}$  represents substituted or unsubstituted aryl, or a substituted or unsubstituted heterocyclic group, and

(C) when  $R^1$  is substituted or unsubstituted aryl,  $R^{2A}$  represents - $C(=W)R^{12}$  (wherein  $W$  and  $R^{12}$  have the same meanings as those mentioned above, respectively),  $R^{3A}$  represents  $-(CH_2)_kNHSO_2R^{3B}$  [wherein  $k$  represents an integer of 1 to 6, and  $R^{3B}$  represents substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkynyl, or  $-NR^{7B}R^{8B}$  (wherein  $R^{7B}$  and  $R^{8B}$  have the same meanings as those of the aforementioned  $R^7$  and  $R^8$ , respectively)],  $-(CH_2)_kNR^{7C}R^{8C}$  (wherein  $k$  has the same meaning as that mentioned above, and  $R^{7C}$  and  $R^{8C}$  have the same meanings as those of the aforementioned  $R^7$  and  $R^8$ , respectively), or  $-(CH_2)_kNHC(=O)R^{7D}$  (wherein  $k$  has the same meaning as that mentioned above, and  $R^{7D}$  has the same meaning as that of the aforementioned  $R^7$ ), and  $R^{4A}$  has the same meaning as that of the aforementioned  $R^4$ ).

25. (Original) The thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24, wherein  $Z$  is a sulfur atom.

26. (Currently Amended) The thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~or 25~~,

wherein R<sup>1</sup> is substituted or unsubstituted lower alkynyl, substituted or unsubstituted aryl, or a substituted or unsubstituted aromatic heterocyclic group.

27. (Currently Amended) The thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~or 25~~, wherein R<sup>1</sup> is substituted or unsubstituted aryl.

28. (Currently Amended) The thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~or 25~~, wherein R<sup>1</sup> is substituted or unsubstituted phenyl.

29. (Currently Amended) The thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~or 25~~, wherein R<sup>1</sup> is substituted or unsubstituted lower alkynyl.

30. (Currently Amended) The thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~or 25~~, wherein R<sup>1</sup> is substituted lower alkyl.

31. (Currently Amended) The thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~or 25~~,

wherein  $R^1$  is  $-C(=W)R^5$  (wherein W and  $R^5$  have the same meanings as those mentioned above, respectively).

32. (Original) The thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 31, wherein W is an oxygen atom.

33. (Currently Amended) The thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 31 ~~or 32~~, wherein  $R^5$  is  $-NR^7R^8$  (wherein  $R^7$  and  $R^8$  have the same meanings as those mentioned above, respectively).

34. (Currently Amended) The thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~any one of claims 24 to 33~~, wherein  $R^{2A}$  is  $-C(=O)R^{12}$  (wherein  $R^{12}$  have the same meanings as those mentioned above).

35. (Original) The thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 34, wherein  $R^{12}$  is lower alkyl.

36. (Currently Amended) The thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~any one of claims 24 to 35~~, wherein  $R^{3A}$  is substituted or unsubstituted lower alkyl.

37. (Currently Amended) The thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~any one of claims 24 to 35~~, wherein  $R^{3A}$  is  $-(CH_2)_kNHSO_2R^{3B}$  (wherein  $k$  and  $R^{3B}$  have the same meanings as those mentioned above, respectively), -  $(CH_2)_kNR^{7C}R^{8C}$  (wherein  $k$ ,  $R^{7C}$  and  $R^{8C}$  have the same meanings as those mentioned above, respectively), or  $-(CH_2)_kNHC(=O)R^{7D}$  (wherein  $k$  and  $R^{7D}$  have the same meanings as those mentioned above, respectively).

38. (Currently Amended) The thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~any one of claims 24 to 35~~, wherein  $R^{3A}$  is  $-(CH_2)_kNHSO_2R^{3B}$  (wherein  $k$  and  $R^{3B}$  have the same meanings as those mentioned above, respectively).

39. (Currently Amended) The thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~any one of claims 24 to 38~~, wherein  $R^{4A}$  is substituted or unsubstituted aryl, or a substituted or unsubstituted aromatic heterocyclic group.

40. (Currently Amended) The thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~any one of claims 24 to 38~~, wherein  $R^{4A}$  is substituted or unsubstituted aryl.

41. (Currently Amended) The thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~any one of claims 24 to 38~~, wherein R<sup>4A</sup> is substituted or unsubstituted phenyl, or substituted or unsubstituted thienyl.

42. (Currently Amended) The thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~any one of claims 24 to 38~~, wherein R<sup>4A</sup> is phenyl.

43. (Currently Amended) A medicament comprising the thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~any one of claims 24 to 42~~ as an active ingredient.

44. (Currently Amended) A mitotic kinesin Eg5 inhibitor comprising the thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~any one of claims 24 to 42~~ as an active ingredient.

45. (Currently Amended) A therapeutic agent for a disease involving cell proliferation comprising the thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~any one of claims 24 to 42~~ as an active ingredient.

46. (Currently Amended) An antitumor agent comprising the thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~any one of claims 24 to 42~~ as an active ingredient.

47. (Currently Amended) A method for therapeutic and/or preventive treatment of a malignant tumor which comprises administering an effective amount of the thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 1 ~~any one of claims 1 to 22~~.

48. (Currently Amended) A method for inhibiting a mitotic kinesin Eg5 which comprises administering an effective amount of the thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 1 ~~any one of claims 1 to 22~~.

49. (Currently Amended) Use of the thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 1 ~~any one of claims 1 to 22~~ for the manufacture of an antitumor agent.

50. (Currently Amended) Use of the thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 1 ~~any one of claims 1 to 22~~ for the manufacture of a mitotic kinesin Eg5 inhibitor.



51. (Currently Amended) A method for inhibiting a mitotic kinesin Eg5 which comprises administering an effective amount of the thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~any one of claims 24 to 42~~.

52. (Currently Amended) A method for therapeutic and/or preventive treatment of a disease involving cell proliferation which comprises administering an effective amount of the thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~any one of claims 24 to 42~~.

53. (Currently Amended) A method for therapeutic and/or preventive treatment of a malignant tumor which comprises administering an effective amount of the thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~any one of claims 24 to 42~~.

54. (Currently Amended) Use of the thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~any one of claims 24 to 42~~ for the manufacture of a mitotic kinesin Eg5 inhibitor.

55. (Currently Amended) Use of the thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~any one of claims 24 to 42~~ for the manufacture of a therapeutic agent for a disease involving cell proliferation.

56. (Currently Amended) Use of the thiadiazoline derivative or a pharmacologically acceptable salt thereof according to claim 24 ~~any one of claims 24 to 42~~ for the manufacture of an antitumor agent.